

FUNGUS DISEASE AFFECTS FRUIT TREES

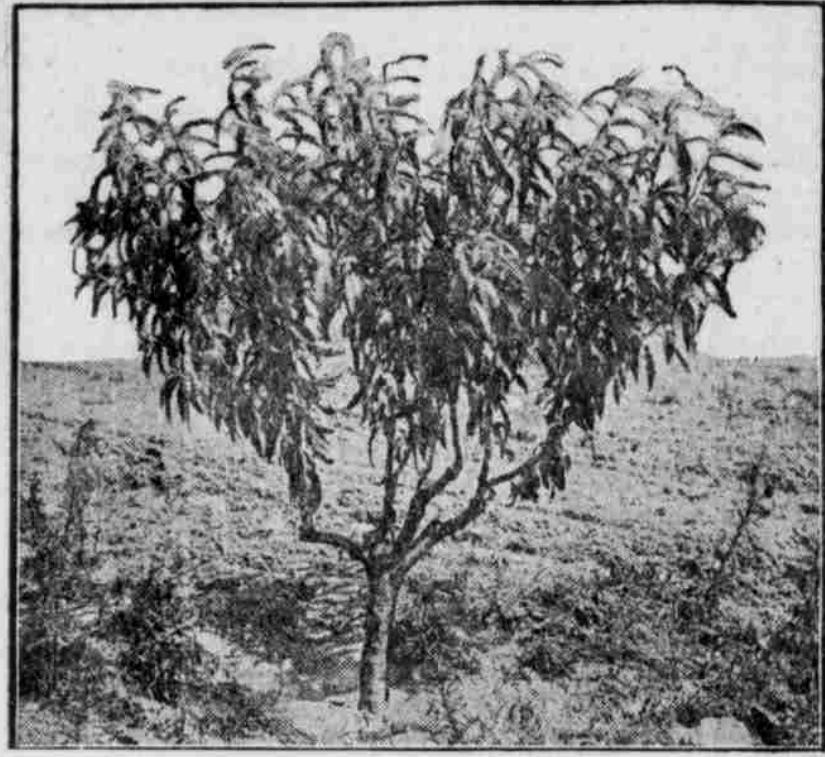
By LEONARD R. HARTILL, Instructor in Fruit Growing, New York State School of Agriculture on Long Island, Farmingdale, N. Y.

Brown rot is a fungus disease that affects the peach, plum and cherry. It is a well-known disease wherever stone fruits are grown throughout Europe and America, and it is probably the most destructive disease affecting these fruits. To a much less degree it also affects some of the pome fruits, such as the apple and pear. During a dry season the disease seldom appears in an epidemic form, but if the season has been wet or muggy the disease becomes very virulent and causes large losses.

Description.—The Brown rot first appears on the fruit as a small circular spot, which under favorable conditions soon involves the entire fruit in decay. The fungus causing the disease breaks through the skin of the fruit, exposing small grayish tufts of spore-bearing threads, which give to the diseased area a moldy grayish-red

A blossom blight may result from infection of the blossoms. This is commonly the case the year after a severe outbreak of the disease, due to the fact that the old mummified fruits remaining on the tree in large numbers are sources of infection during the blossoming period. The blighting of the blossoms sometimes results in the twigs becoming infected, due to the disease gaining entrance into the twigs through the blossoms. It would seem that the fungus cannot penetrate into the twigs directly, but only through a blossom or a wound.

Rot After Harvesting.—When there has been a serious outbreak of the disease, with the result that spores are abundant in the orchard infected, every fruit in the orchard is likely to have spores on its surface, even though the rot has not developed at the time of harvesting. These spores may germinate during favorable conditions in transit, infect the fruit and cause it to rot, and so a shipment that has left the orchard, apparently in good condi-



THREE-YEAR-OLD TRIUMPH PEACH TREE.

appearance. Spores are produced in great numbers by these spore-bearing tufts, and are borne by the wind and carried by birds and insects from tree to tree. Finding lodgment on the fruit these spores germinate and produce another infection and another crop of spores.

The decayed fruit in a shriveled, dried-up condition that has caused them commonly to be called "mummies," may cling to the tree or fall to the ground. The fungus living over the winter in such mummies and spores which are produced from them in the spring start new infections. It is also possible that the spores which have been disseminated during the late summer and have adhered to bud scales, etc., may likewise cause infection the following year.

tion, may reach the market badly decayed.

Control.—Destroy all mummified fruit during the autumn. Peaches should be thinned so that no two fruits are touching on the tree. Spray peaches two or three weeks after the petals fall, using 8-8-50 self-boiled lime-sulphur. Spray again two or three weeks later with the same spray, and again about a month before the fruit is expected to ripen.

For the control of Brown rot on prune and plum spray as in the case of the peach, but use commercial lime-sulphur (32 Baume), one part of the commercial lime-sulphur to 40 parts of water.

For control of Brown Rot on the cherry spray as for the peach, but use boiled lime-sulphur 10-10-40.

IDENTIFICATION OF SEEDLING GRASSES

It is often desirable to identify grasses and small-grain seedlings by their vegetative characters. The usual botanical classifications based on the structure of the flowering parts are not useful for this purpose. Any mention in botanical descriptions is usually for the purpose of confirming an identification. In lawns and pastures the best grasses are seldom allowed to reach the flowering stage, and some grasses change so materially in appearance as they reach maturity that it is difficult to see a resemblance to the young plants in those that have headed.

Difficult to identify. The seedlings of small grains are, under all conditions, very difficult to identify. Men who are constantly growing these grains usually learn to distinguish the different species. Even certain varieties in a species are sometimes recognizable. But there is great variation even in the different varieties, and the varietal differences in each species make it difficult to find a combination of characters that will always hold true for the species.

Following is the description of two very common grasses, meadow fescue and quack grass:

Meadow fescue is a tufted, glabrous, dark-green perennial; leaves rolled in

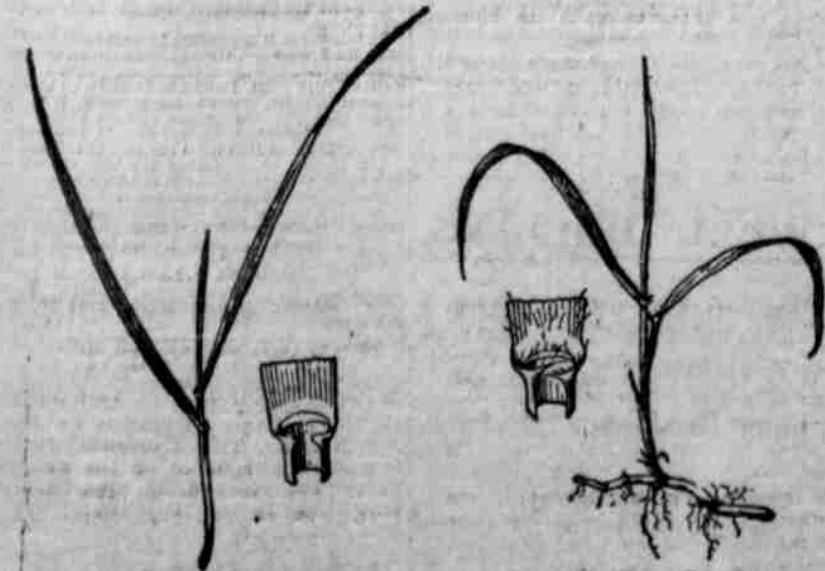
the bud; collar broad, continuous; auricles none; ligule membranous, short, truncate; sheaths not compressed, reddish pink below ground; blades flat, sharp pointed, rough on the margins, glossy beneath, nerved above, three-sixteenths inch wide; nerves separated into pairs by white lines when viewed by transmitted light.

This grass closely resembles both Italian rye grass and perennial rye grass. It may be distinguished from Italian rye grass by its rough-margined blades (test with the tongue) and also by the nerves in the blades. Perennial rye grass is distinguished by having its leaves folded in the bud.

Quack Grass.

Quack grass is a pale-green perennial, creeping by its long rootstocks; leaves rolled in the bud; collar broad, continuous, hairy; auricles slender, clawlike; ligule membranous, short, entire; sheaths hairy, not compressed; blades flat, finely hairy at the base, sharp pointed, one-fourth inch wide; nerves broad, not prominent; rootstocks strong, elongate, one-eighth inch or more in diameter.

This is a common, very aggressive grass. The hairs, while quite noticeable in the spring, are often invisible in the fall unless a lens is used.



MEADOW FESCUE AND QUACK GRASS PERENNIALS.

LEGUME CROPS NEED HELP OF BACTERIA

Alfalfa, Clover, Peas and Vetch Must Be Inoculated to Insure Results.

STATE FURNISHES CULTURES

Federal Supply Runs Out, but Bacteriological Laboratory at East Lansing is Saving Day for Michigan.

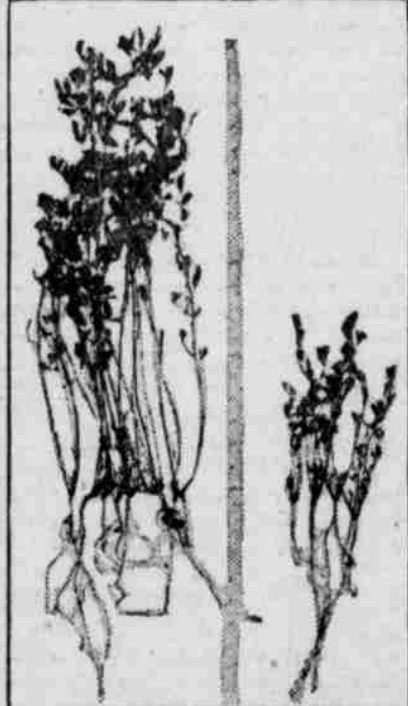
East Lansing, Mich.—Under pressure of the demand being made upon for food and more food, Michigan farmers are expected this season to devote more ground than commonly to alfalfa and leguminous crops generally, but their success, in the case of alfalfa, at least, will be good or otherwise only if the seed or soil is inoculated with the right kind of bacteria.

These bacteria, which are principally furnished to the farmer in the form of cultures, are secured usually from the United States department of agriculture and the bacteriological department of the Michigan Agricultural college, but this spring the Michigan institution will be compelled to meet the demand alone, for notices sent out from Washington a few days ago announce that the federal bacteriologists will not fill any more orders until July 1. The crop campaign, it is said, has practically cleaned them out of the nodules-forming "bugs."

Still, the M. A. C. laboratory is expected to prove equal to the occasion, for while 2,000 or more cultures have already been sent to various parts of the state, there is reported to be a supply on hand adequate, at least, for Michigan's requirements.

Two Methods of Inoculation. Two methods of inoculation are employed. One of these consists in mixing the alfalfa or clover seed, as the case may be, with the bacterial culture. The other, known as the soil-inoculation method, consists in distributing over the field to be planted soil from some field which has produced good crops of nodule-forming legumes.

Where soil is used, 300 or 400 pounds of soil from the old alfalfa or clover field are put on each acre of the new field, either by running it through a



BACTERIA MAKE ALFALFA THRIVE.

The seed from which the plant on the left sprang up was inoculated. No treatment was given the puny plant on the right.

grain drill, or by broadcast sowing, if the land has been fitted. The inoculating material should be taken from the top four or five inches of the old field, after an inch of the surface soil has been removed. The best time to apply it to the new field is in the evening, just before a rain, or during a rain. The inoculating, of course, should be done before the seed is sown.

When the purse cultures are employed, the procedure is as follows: 1. Do not open the bottle of culture until you are ready to treat the seed, and treat only as much seed as you can sow in a day.

2. Cover the seed with water and after standing from two to five minutes allow all moisture to drain away. (It is convenient to place the seed in a grain sack and dip into a tub of fresh, clean water, then suspend the sack for a few minutes.)

3. Spread the seed on a clean oil-cloth, table or floor in a clean, shady place.

4. Break up the culture by shaking or jarring the bottle against the hand, pour a little clean, cold water (from one to three teaspoonfuls) into the bottle of culture and mix the contents with the seed. It is recommended and thought best by many who are authorities in seed inoculation that about two ounces of granulated sugar be mixed throughout the mass of moistened seed before treating with the culture. The use of glue is condemned.

5. If the seed is too wet and sticky to plant, it may be spread out in the shade. It should be neither wet nor dry, but as moist as it can be and yet seed evenly. Plant the seed just as you would treat untreated seed.

6. A small strip should be planted with uninoculated seed for comparison and this should be seeded first.

FERTILIZERS HELP POTATOES

Improve Yield of Crop When Judiciously Applied

East Lansing, Mich.—Fertilizers, applied judiciously, have been recommended by potato specialists of the Michigan Agricultural college as helpful "first aids" in improving the potato crop—though the warning is added that they are advocated to supplement stable manure, and not to take the place of it.

"Under war conditions," it is explained, "potash is too expensive to warrant its general use for potatoes. Nitrogen also is high in price, and should be used only sparingly and with judgment, but when a clover or alfalfa sod is plowed under the percentage of nitrogen need not be very great. A fertilizer containing from 2 to 4 per cent of nitrogen and from 8 to 12 per cent of phosphoric acid is desirable for the potato crop under present conditions."

"When a clover or alfalfa sod is plowed under, from 250 to 500 pounds of acid phosphate per acre will do, but if no manure has been applied to the sod, 200 or 250 pounds of fertilizer containing 2 per cent of nitrogen and from 8 to 10 per cent of phosphoric acid may be used in addition to the acid phosphate. Acid phosphate may be used with profit in larger quantities on heavier soils than on light ones."

"The results from the use of commercial fertilizers depend to a considerable extent upon the method of application. Very little benefit will result from the scattering of the fertilizer on the surface of the ground unless it is worked into the moist soil. A grain drill with a fertilizer attachment is a good tool for accomplishing this."

"If the potatoes are planted with a horse planter which has a fertilizer attachment, 200 to 250 pounds of fertilizer may be applied in the furrow and the remainder broadcast."

POULTRY QUICK MEAT SOURCE

Cockerels Can Be Marketed When Four Weeks Old.

East Lansing, Mich.—In these days when quick meat production is almost as essential as big meat production, poultry offers a quick method of meeting market demands. If we are to believe what the American Poultry association is telling the public. To its recommendations the poultry department of the Michigan Agricultural college has added the suggestion that persons with a back yard which isn't being put to some useful purpose can profitably raise a few hens.

"Pullets," say the poultrymen, "can be brought into laying condition in four months' time. Cockerels can be marketed when four weeks old—added to which there is the fact that there is no other animal on the farm capable of converting waste material into so delicious meat in such a short period."

"If every family living on the outskirts of our larger cities, or in the smaller villages, was to keep a half-dozen hens, the family food cost would be appreciably lowered through the production of eggs. Droppings from the table, instead of passing through the garbage can, would be transformed by hens into an article of food of highest merit—accomplishing at one stroke the double aim of the present campaign to conserve food, as well as to increase production."

"A well-bred hen will produce an average of ten dozen eggs a year, and for the small flock, which derives its maintenance from the home tables, a gain of \$2 a head would be realized."

"Ten hens will keep an average family in eggs for a year, and perhaps produce a few extra ones for sale. A hen needs but a square rod of space, and a backyard three rods by four rods will keep ten hens, and a piano box supplies all the required shelter. Lawn clippings will do for green food."

CLEAN SEED INSURES BEANS

Precautions Must Be Taken to Guard Against Disease Losses of Other Years.

East Lansing, Mich.—Recalling the disastrous losses which the bean diseases, anthracnose and blight, have caused in the past, Michigan Agricultural college bean men are advocating planting of only strictly clean seed, if the Michigan farmer is going to do as effective work in the furrows this summer as the soldiers in the trenches. Trimmed to the "bone," their recommendations are the following:

Plant the best beans obtainable, and use home-grown seed, rather than seed from outside of the state. California beans, for instance, will not mature in Michigan.

If your own seed is to be used, see first that it is carefully hand-picked and all blighted and frosted beans taken out. Only clean seed will produce a clean crop.

Do not plant immature or frosted beans. They will neither germinate well nor bring forth vigorous plants.

Do not cultivate the beans while wet with rain or dew. To do so will spread the blight.

Those in doubt as to the cleanliness of their seed are invited to send a sample to the botany department of the college for free examination.

An effective use of manure this year is on fields intended for beans or late potatoes.

The application of either acid phosphate or soluble bone meal at the rate of from 200 to 300 pounds per acre is also advised.

INTERNATIONAL SUNDAY SCHOOL LESSON

By E. O. SELLERS, Acting Director of the Sunday School Course of the Moody Bible Institute.

LESSON FOR JUNE 10

JESUS CRUCIFIED.

LESSON TEXT: John 19:16-22, 25-30. GOLDEN TEXT:—Christ died for our sins.—1 Cor. 15:3.

We are compelled to omit a consideration of that dark, despicable trial in Pilate's judgment hall. Pilate's weakness subservience to custom and the cry of the politician is one of the blackest pages in history. His scourging of the man whom he, himself, declared innocent, is practically without parallel. After the mocking and the scourging, Pilate said unto the people, "Behold the man" (v. 5), and later in sarcasm he said to the same people, "Behold your king" (v. 14). Teachers should emphasize at the beginning and all through this lesson that Jesus suffered and died for the sins of all men, ours as well as those of his own day.

I. The Crucifixion of Jesus (vv. 16-22). It was about nine o'clock in the morning when Pilate gave his infamous order that Jesus should be crucified. It was indeed a sorrowful procession which moved itself along the "Via Dolorosa" (the Sorrowful Way), consisting of the Roman soldiers, the tottering, physically exhausted man of Galilee, and Luke adds, "sorrowing women."

They took him to the place of a skull, a hill about sixty feet high, at the foot of which was the rock-hewn sepulcher in which his body was later laid. The place was called in Hebrew "Golgotha," the Aramaic for skull. Calvary is the Latin for the same. On either side of him were crucified the robbers, which was an evident effort to add to his shame as well as a salutary warning to the Passover pilgrims. Over the cross Pilate wrote a title on a wooden tablet. Following the usual custom, this was nailed at the head of Jesus, setting forth his crime. The words it bore were, "Jesus of Nazareth, King of the Jews," as though Pilate would take malicious revenge upon the mob which had made him perform a deed he had sought to avoid. Literally this sign meant "This man is the kingdest of all Jews, and see what they have done to him."

In response to Pilate's questioning Jesus said, "I am the King of the Jews." Pilate knew that he was innocent, and sought to let him go free, but rather than incur the hatred of the Jewish authorities, he yielded to their demand for his blood, and became a party to the murder of the Son of God. Men today take a part in his crucifixion, rather than surrender wholly to him, and pay the price of open confession. "They crucified him." How these words laid the pride of men in the dust. Human nature is the same today as it was two thousand years ago when the world's bitterest hate was wreaked not upon a bad man but upon the best man, the perfect man, the God-man. The pain Jesus suffered on Calvary was no imagination. He suffered it all for us (Isa. 53:6), but the physical suffering was not the most severe agony he bore (Ps. 69:20; Matt. 27:48). The crucifixion of Jesus was part of the eternal purposes of God's love and redemption.

II. The World's Darkest Hour (vv. 23-30). Each of the Gospel writers refers to the part the soldiers took in casting lots for his garments. They were unconsciously fulfilling the prophecy of Psalm 22:18, and it was from their number that one of the supreme testimonies to the character of Christ came (See Matt. 27:34). The first three evangelists tell us of the throng of pilgrims who passed along the highway from the north, close at hand, and who wagged their heads in imitation and mockery of the agony of the one who was being crucified. But there were others who were spectators of this event, a group of Christ lovers (v. 25).

"It is finished." These are remarkable words. He had finished his suffering; he had finished that for which he came into the world when he began his ministry; he had finished the mission for which his father had sent him into the world; he had finished and fulfilled the prophecies concerning his suffering and death; he had completed the work of the redemption; the atonement was finished; and Satan's power was finished; the Mosaic law was finished as far as its claims upon the believer were concerned (Rom. 10:4; Col. 2:13; Eph. 2:15 and 16). Outwardly it seemed to be Satan's supreme hour. It was the world's darkest hour.

The seven last words. These would be an interesting study for any class. (1) "Father forgive them for they know not what they do;" (2) "Today thou shalt be with me in Paradise;" (3) "Woman, behold thy son;" (4) "My God, my God, why hast thou forsaken me?" (5) "I thirst;" (6) "It is finished;" (7) "Father into thy hands I commit my spirit." Christ had power to lay down his life. He had power to take it up again, but he laid it down, submitting to a burial in the tomb. At that moment note the effect upon the malefactor, upon the centurion, upon the elements of cloud and sky, upon the veil of the temple, upon the people and upon his friends. What is the effect of this story upon yourself, teachers, and upon those who are listening to your instruction?

KING GEORGE'S FINE LIBRARY

Books and Manuscripts Are of Great and Constantly Increasing Historical Value.

King George is constantly improving the great library at Windsor castle. The library has grown to its present tremendous proportions out of a series of smaller rooms added by successive sovereigns from time to time. King George's contributions and improvements, even thus early in his reign, are as notable as those of any of his predecessors.

The request for regimental records which the librarian, Mr. Fortescue, is now making will enormously increase the collection's historical value.

The library is largely used by officers on duty at the castle, so the occupants of the equerries' room, where they are entertained, will be delighted with the new war section. A story of the great library is still told in the equerries' room.

A young officer of the guards swore that when he was sitting in the library a phantom female figure passed him and disappeared into the thickness of the walls. His statement created a sensation in the castle, because the library is supposed to be haunted by the ghost of Queen Elizabeth.

Charles II began the collection, but the bulk of the original library was handed over to the British Museum by George IV, William IV then brought together at Windsor the books that remained in the various royal palaces.

He left them, however, in a highly-pedigree state, and the prince consort evolved order out of chaos. King Edward continued the good work, and now King George is completing it.—London Tit-Bits.

The Cleverest Son.

This fellow we're talking about was the more or less proud father of six children. The eldest, it is related, was the most alive and therefore the worst. Under his leadership the rest of the kids made existence miserable for the entire neighborhood. And the father was moved to temporize.

"I will give a dollar," he announced, "to the one who refrains from mischief from now until a week from today."

"Dad," said the oldest, "do you think I could win the dollar?"

"Yes, son. You are more capable of winning it than any of the rest. You have brains in your head. It would be as easy as rolling off a log for you to keep this dollar—if you only made up your mind to do it."

"Well, dad, I'll tell you what I'll do. You give me a quarter now and I'll promise not to compete."—Cleveland Plain Dealer.

Probably True.

In one little Missouri town is a general store which is also a big advertiser. In emphasis of the store's long term of service in that community, the owners employ the advertising slogan, "We Fed Your Father." In its ads every week. Last week, the subject was "Chick Feed," a big line at the top and another just in near the bottom. Below the second, "Chick Feed" line came the slogan, "We Fed Your Father."

A Sore Disappointment. "Here's a self-made man who scoffs at a college education."

"Don't be too hard on him."

"Well, why not?"

"Maybe he has a son at college who has never 'made' anything but the glee club."

The Inner Meaning.

Remember that as you live your life each day with an uplifted purpose and unselfish desire, each and every event will bear for you a deep significance—an inner meaning—and as you learn their import, so do you fit yourself for higher work.—William G. Judge.

Washington Honored While Alive.

Washington was the only American whose birthday was publicly celebrated while he still lived. February 22 was quite widely observed while he was president.

DETROIT MARKETS.

CATTLE—Best Steers	11.50	@12.00
Mixed Steers	9.50	@10.50
Light Butchers	8.75	@9.75
Best Cows	9.50	@10.00
Common Cows	7.00	@7.50
Best Heavy Bulls	9.50	@10.00
Stock Bulls	7.50	@8.00
CALVES—Best	14.50	@14.75
Common	8.00	@12.00
HOGS—Best	15.00	@15.50
Pigs	13.50	@13.75
SHEEP—Common	8.00	@9.00
Fair to good	11.00	@12.00
LAMBS—Best	15.00	@15.25
Light to Common	12.00	@12.50
DRESSED HOGS	19	@19 1/2
DRESSED CALVES	17	@18
Fancy	20	@21
LIVE POULTRY—(Lb.)		
No. 1 Hens	24	@25
No. 2 Hens	22	@23
Small Hens	22	@23
Ducks	22	@23
Geese	14	@15
Turkeys	24	@25
CLOVER SEED	11.20	
TIMOTHY SEED	3.75	
WHEAT	2.70	@2.75
CORN	1.61	@1.63
OATS	.63	@.65
RYE	2.20	
BEANS	8.90	
HAY—No. 1 Tim.	18.50	@19.00
Light Mixed	17.50	@18.00
No. 1 Clover	13.50	@14.00
POTATOES—Per bu.	2.80	@2.90
BUTTER—Dairy	.40	
Creamery (extra)	.34	
EGGS	.36	

Mortgage Sale.

Default having been made in the conditions of a mortgage made by Peter M. Berres and Mary Berres, of St. Clair County, Michigan, to Charles Kruger and Ena Kruger, and to the arrival of each of them, dated the fifth day of March, A. D. 1913, and recorded in the office of the Register of Deeds for the County of St. Clair, State of Michigan, on the 13th day of March, 1913, in Liber 122 of Mortgages on Page 322, on which mortgage there is claimed to be due at the time of this notice the sum of Three Thousand, Two Hundred and Twenty-six (\$3,226.00) Dollars and an attorney's fee of Thirty-five (\$35.00) Dollars in such case made and provided, and no suit or proceeding at law having been instituted to recover the money secured by said mortgage, or any part thereof, Now Therefore, by virtue of the power of sale contained in such mortgage and the statute in such case made and provided, we hereby give notice that on the 25th day of June, 1917, at ten o'clock in the forenoon, we shall foreclose and sell at public auction to the highest bidder at the Main East entrance to the Court House, commonly known as the City Hall, in the City of Port Huron, St. Clair County, Michigan, (that being the place where the Circuit Court for the County of St. Clair is held), the premises described in said mortgage, or so much thereof as may be necessary to pay the amount due on said mortgage with interest at six (6) per cent and all local costs together with the attorney fee of Thirty-five (\$35.00) as aforesaid. The said premises being described as follows: To-wit: A piece of land bounded as follows: On the North by the Kinball Road, on the East by the Highway and Tomlinson, on the South by the Newman Estate, on the West by Fuller, and also the Newman Estate, and being in the North-West Quarter of the North-East Quarter of Section Twenty-one (21), Town Six (6) North, Range Sixteen (16) East, containing nineteen and one-half acres, be the same more or less, all of which is a part of said Township of Kinball, St. Clair County, Michigan.

Dated, March 1st, 1917.

JACOB BERNATZ, Mortgages.

THOMAS H. GEORGE, Mortgages.

Business address, N. 4, Jenks Bldg.

Port Huron, Michigan.

45-13

MORTGAGE SALE.

Default having been made in the conditions of a certain mortgage, made and executed by Harry Custance and Margaret Custance, his wife, of Kinball township, St. Clair County, Michigan, to Jacob Bernatz, of Port Huron, Michigan, and recorded in the office of the Register of Deeds for St. Clair County, in Liber 122 of Mortgages on page 622, and default having been made in the payment of principal and interest, and taxes stipulated in said mortgage, there is claimed to be due and remaining unpaid on said mortgage at the date of this notice the sum of one hundred fifty-nine and 7/10 dollars (\$159.70), principal and interest, and taxes paid on said premises, and no suit or proceeding at law having been instituted to remove the said debt secured by said mortgage, or any part thereof, therefore, notice is hereby given, by virtue of the power of sale contained in said mortgage, and the statute in such case made and provided: (on the 25th day of May, 1917, at ten o'clock in the forenoon, the undersigned will, at the front door of the Court House, in the City of Port Huron, Michigan, that being the place where the Circuit Court for the County of St. Clair is held, sell at public auction the premises described in said mortgage, or so much thereof as may be necessary to satisfy said mortgage, to pay the sum due as aforesaid on said mortgage, together with Attorney Fee of \$15.00. Said mortgage premises being described as follows: To-wit: A piece of land bounded as follows: On the North by the Kinball Road, on the East by the Highway and Tomlinson, on the South by the Newman Estate, on the West by Fuller, and also the Newman Estate, and being in the North-West Quarter of the North-East Quarter of Section Twenty-one (21), Town Six (6) North, Range Sixteen (16) East, containing nineteen and one-half acres, be the same more or less, all of which is a part of said Township of Kinball, St. Clair County, Michigan.

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